

# Detailed System Design

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## Scheduled Invoice Generation – V 2.0

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<b>Version/ Review Date</b>	<b>Brief Summary of Changes From Prior Version</b>
Version 1.0 09/15/2003	Original
Version 2.0 04/29/2004	<ul style="list-style-type: none"><li>• P.5: The name of the CIW table where SIG fields can be obtained is: M_AP_READY_RECURRING_PAYMENTS</li><li>• P.9: Added two new field: SCHED_PYMT_DT and REC_NO</li><li>• P.9: Updated examples</li></ul>

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# 1. Overview

## 1.1. Document Definitions and Naming Conventions

This section describes/defines the DTD naming conventions applied in this document.

### Transaction Layout Definitions

- Attribute – The name of the data element in the database, as well as the name of the XML tag.
- Caption – The label on the User Interface that defines the data element.
- Description – A textual description of the data element.
- R/C – Required/Conditional. Required specifies that the data element is required by the interface for the transaction to successful submit. Conditional means that specified conditions must be adhere to by the interface for the transaction to successful submit. No value specifies that the data element is optional by the interface for the transaction to submit.
- Type – The data type of the data element.
  - VarChar – Variable Character text. Alphanumeric data.
  - Byte – Unsigned character.
  - Char – Character. Fixed length alphanumeric text, required to meet the exact specified size.
  - Date – Date Format YYYY-MM-DD
  - Decimal – Numeric value with a specified decimal position (9,3) = 999999999.999
  - Boolean –True/False. True conditions = "true", False conditions = "false".
  - Memo – Alphanumeric Text with a maximum of 1500 characters.
  - Currency – Numeric, with two decimal positions. Format 9999.99.
  - Integer – Numeric value, whole number.
  - Long – Numeric value, a long whole number.
- Size – The (numeric) size of the data element
- NewMMARS Notes – Notes specific to the NewMMARS data element.
- MMARS Derivation Notes – Notes specific to translating MMARS document layout data to NewMMARS.

- **H.TEXT** – Data element from table section of the MMARS table layout.

### **XML Definitions and Conventions**

- **Root** - The NewMMARS XML file and document root declaration identifies required root elements that must contain the XML file or document (transaction) to load into NewMMARS. The NewMMARS XML file must contain a single root element that contains specified attributes, at the file level. Each document transactions contained within the XML file must also contain a root element that contains the specified attributes, at the document level.
- **Attributes** - Attributes are name-value pairs that occur inside start-tags after the element name.
- **Elements** - Elements are the most common form of markup. Delimited by angle brackets, most elements identify the nature of the content they surround. Elements normally begin with a start-tag, <element>, and end with an end-tag, </element>.
- **CDATA Tags** - In a document, CDATA instructs the parser to ignore (most) markup characters. Between the start of the section, <![CDATA[ and the end of the section, ]>, all character data is passed directly to the application, without interpretation. Elements, entity references, comments, and processing instructions are all unrecognized and the characters that comprise them are passed “literally” to the application.

## **1.2. Document Usage**

The Commonwealth requires a schedule-based recurring payment mechanism to make payments to vendors for goods and services such as leases, rents, or health and human services contracts. Some of these payments (known as Reconciling Payments) are recurring payments that have predefined reconciliation periods. These are legislatively mandated payments to be made on a recurring schedule in advance of the receipt of services. Periodic reconciliation must occur in order for the payment stream to continue. The system must prevent further payments against an Order until invoice information received from the vendor has been entered. Future payment amounts should be adjusted when actual paid amounts differ from the amount on the invoice information received from the vendor. (Entries that result in negative amounts should be deducted from current payment amounts and the difference issued as the payment amount.) The schedules specify unique sets of planned payment and reconciliation dates for that fiscal year. The schedules do not necessarily follow regular intervals. Reconciliation will occur on the Scheduled Invoice Generation table, SIG.

The Office of the Comptroller develops the schedules to be offered for an upcoming fiscal year with the opening of each fiscal year. Departments may request additional payment schedules at any time to support lease order negotiations.

Recurring Payments are processed automatically from the entry of a purchase order through to disbursement without user intervention unless budgetary or other document edits are not met. The defined Payment Schedule determines the Payment Date of each Recurring Payment. Managers shall be able to review status and history of Recurring Payments through online views. Recurring Payments shall be “caught up” if a purchase order is entered for prior payment periods on a schedule. Users must be able to place all or selected payments for a given schedule on Hold where payments are not generated and further

sequencing should stop. When the payment is taken off hold, payments resume at the next (not-yet-processed) sequencing event.

Department can interface reconciling information to the SIG table for records that have the Reconcile Period set to true.

The NewMMARS SIG table replaces the MMARS RRPL table for reconciliation.

Note: All fields can be obtained from the CIW using the following table: M\_AP\_READY\_RECURRING\_PAYMENTS

## 2. Publishable Specification

### 2.1. Transaction Layout: SIG (Table Update)

#### 2.1.1 SIG Table Component: R\_SCHED\_INV\_GEN

Attribute	Caption	Description	R/C	Type	Size	NewMMARS Notes	MMARS Derivation Notes
ORD_DOC_CD	Order Document Code	The alpha-numeric identification code assigned to the document on the Document Control table.	R	VarChar	8	Value: • RPO	ORD_DOC_CD = H.REF-TRANS-CODE
ORD_DOC_DEPT_CD	Order Document Department	The department code assigned to this document.	R	VarChar	4	Examples: • DMR • DMH	ORD_DOC_DEPT_CD = H.REF-TRANS-DEPT
ORD_DOC_ID	Order Document ID	The document ID to identify this document.	R	VarChar	20	Must be a valid document ID for a Final RPO on the document catalog.	ORD_DOC_ID = H.TRANS-NUMBER
ORD_DOC_VERS	Order Document Version	The version number assigned to this document. The version is incremented with each modification draft and after with a cancellation.	R	Integer		Examples: • 1 • 2 • 3	
ORD_DOC_UNIT_CD	Order Document Unit	The unit code associated with this document.	R	VarChar	4	Examples: • 1000 • 2000	
ORD_DOC_VEND_LN_NO	Order Document Vendor Line No.	The vendor line number visible to a user that uniquely identifies each vendor line within a document.	R	Integer		Examples: • 1 • 2	
ORD_DOC_COMM_LN_NO	Order Document Commodity Line No.	The commodity line number visible to a user that uniquely identifies each commodity line within a document.	R	Integer		Examples: • 1 • 2	
HLD_PYMT	Hold Payment	On the Scheduled Invoice Generation table the Hold Payment option allows users to place a selected recurring record on hold. This will prevent the record from being picked up by the Generate Recurring Invoice process.					

Attribute	Caption	Description	R/C	Type	Size	NewMMARS Notes	MMARS Derivation Notes
SNGL_PYMT	Single Payment	On the Scheduled Invoice Generation table, the Single Payment option allows users to indicate whether disbursement requests for a recurring payment should be combined into a single disbursement.					
DISB_HDLG_CD	Disbursement Handling	On the Scheduled Invoice Generation table, the Disbursement Handling field allows users to indicate a handling code for a specific recurring record. This pick list for this field filters against the Disbursement Handling (HDCD) table.		VarChar	2		
RECON_FRM	Reconcile From	On the Scheduled Invoice Generation table, Reconcile From allows users to indicate the start date of the reconciliation period for the selected record. This field is required if the Reconciling Period Indicator is selected; however, if the Reconciling Period Indicator is not selected, then you cannot enter a value into the Reconcile From field. The Reconcile From date must be 1 day greater than the Reconcile To date of the previous Document Code, Department, ID and Commodity Line Number record.	R	Date			RECON_FRM = H.SERVICE-FROM-YEAR + H.SERVICE-FROM-MONTH + H.SERVICE-FROM-DAY
RECON_TO	Reconcile To	On the Scheduled Invoice Generation table, Reconcile To allows users to indicate the start end date of the reconciliation period for the selected record. This field is required if the Reconciling Period Indicator is selected; however, if the Reconciling Period Indicator is not selected, then you cannot enter a value into the Reconcile To field. The Reconcile To date cannot be less than the Reconcile From date, and it must be less than the Service From date on the RPO commodity line.	R	Date			RECON_TO = H.SERVICE-TO-YEAR + H.SERVICE-TO-MONTH + H.SERVICE-TO-DAY

Attribute	Caption	Description	R/C	Type	Size	NewMMARS Notes	MMARS Derivation Notes
RECON_QTY	Reconcile Quantity	On the Scheduled Invoice Generation table, Reconcile Quantity allows users to indicate the reconciliation quantity for the selected record. This field is required if the Reconciling Period Indicator is selected; however, if the Reconciling Period Indicator is not selected, then you cannot enter a value into the Reconcile Quantity field.	C	Decimal	15,5	Required if the RPO commodity line being reconciled is for an Item.	RECON_QTY = H.QUANTITY
RECON_AM	Reconcile Amount	On the Scheduled Invoice Generation table, Reconcile Amount allows users to indicate the reconciliation amount for the selected record. This field is required if the Reconciling Period Indicator is selected; however, if the Reconciling Period Indicator is not selected, then you cannot enter a value into the Reconcile Amount field.	R	Currency			RECON_AM = H.VI-AMOUNT
VEND_INV_NO	Vendor Invoice Number	The invoice number from the invoice received from the vendor. The Vendor Invoice Number must be unique and cannot already exist on the Vendor Invoice Registry table for the referenced vendor. On the Scheduled Invoice Generation table, the Vendor Invoice Number is required when the Reconciling Period Indicator option is selected.	R	VarChar	30		VEND_INV_NO = H.EXP-VI-TRANS-NUMBER



Attribute	Caption	Description	R/C	Type	Size	NewMMARS Notes	MMARS Derivation Notes
SCHED_CD	Schedule	Schedule codes are defined on the Recurring Payment Schedule table. On the Scheduled Invoice Generation table, the Schedule field displays the Schedule code of a Recurring Payment Order document. Schedule is updated with the Schedule code from the header of a Recurring Payment Order document submitted to final. On a Recurring Payment Order document, the Schedule dictates how and when recurring invoices will be generated for the order. Attributes defined on the Recurring Payment Schedule table control how frequently invoices will be generated, whether they are generated at the beginning of a period (Date of Service Type = Forward) or at the end of a period (Date of Service Type = Backward), and whether an entry on the SIG table for a particular sequence needs to be reconciled.	R	VarChar	4	Must be equal to the SCHED_CD defined on the RPO commodity line being reconciled.	
SCHED_PYMT_DT	Scheduled Payment Date	The date that a vendor is scheduled to receive payment	R	Date		The date must be valid on the Recurring Payment Schedule (RPSCHD) table for the Schedule selected. This field can be obtained from the CIW table: M_AP_READY_RECURRING_PAYMENTS	
REC_NO	Record Number	The unique identification number assigned to this record.	R	Integer		This is a required field and must be provided for every record being updated. This field can be obtained from the CIW table: M_AP_READY_RECURRING_PAYMENTS	

### 2.1.2 SIG Example 1 – XML layout for line type item

*This example is for reconciling RPO DMR INTF\_2004\_0000000001 for \$1000.00 from 8/1/03 to 10/1/03. Since the line type is item, the quantity also needs to be reconciled. It is \$10.00 in this example. Schedule Code is 400.*

```
<AMS_DATAOBJECT_XML_IMPORT_FILE VERSION="1.0">
  <R_SCHED_INV_GEN AMSDataObject="Y">
    <ORD_DOC_CD Attribute="Y"><![CDATA[RPO]]></ORD_DOC_CD>
    <ORD_DOC_DEPT_CD Attribute="Y"><![CDATA[DMR]]></ORD_DOC_DEPT_CD>
    <ORD_DOC_ID Attribute="Y"><![CDATA[INTF_2004_0000000001]]></ORD_DOC_ID>
    <ORD_DOC_VERS Attribute="Y"><![CDATA[1]]></ORD_DOC_VERS>
    <ORD_DOC_UNIT_CD Attribute="Y"><![CDATA[1000]]></ORD_DOC_UNIT_CD>
    <ORD_DOC_VEND_LN_NO Attribute="Y"><![CDATA[1]]></ORD_DOC_VEND_LN_NO>
    <ORD_DOC_COMM_LN_NO Attribute="Y"><![CDATA[1]]></ORD_DOC_COMM_LN_NO>
    <RECON_FRM Attribute="Y"><![CDATA[2003-08-01]]></RECON_FRM>
    <RECON_TO Attribute="Y"><![CDATA[2003-10-01]]></RECON_TO>
    <RECON_QTY Attribute="Y"><![CDATA[10.00]]></RECON_QTY>
    <RECON_AM Attribute="Y"><![CDATA[1000.00]]></RECON_AM>
    <VEND_INV_NO Attribute="Y"><![CDATA[12345678]]></VEND_INV_NO>
    <SCHED_CD Attribute="Y"><![CDATA[400]]></SCHED_CD>
    <SCHED_PYMT_DT Attribute="Y"><![CDATA[2003-10-01]]></SCHED_PYMT_DT>
    <REC_NO Attribute="Y"><![CDATA[1201]]></REC_NO>
  </R_SCHED_INV_GEN>
</AMS_DATAOBJECT_XML_IMPORT_FILE>
```

### 2.1.3 SIG Example 2 – XML layout for line type service

*This example is for reconciling RPO DMR INTF\_2004\_0000000002 for \$500.00 from 8/15/03 to 9/1/03. Since the line type is service the quantity cannot be reconciled. Schedule Code is 200.*

```
<AMS_DATAOBJECT_XML_IMPORT_FILE VERSION="1.0">
  <R_SCHED_INV_GEN AMSDataObject="Y">
    <ORD_DOC_CD Attribute="Y"><![CDATA[RPO]]></ORD_DOC_CD>
    <ORD_DOC_DEPT_CD Attribute="Y"><![CDATA[DMR]]></ORD_DOC_DEPT_CD>
    <ORD_DOC_ID Attribute="Y"><![CDATA[INTF_2004_0000000002]]></ORD_DOC_ID>
    <ORD_DOC_VERS Attribute="Y"><![CDATA[1]]></ORD_DOC_VERS>
    <ORD_DOC_UNIT_CD Attribute="Y"><![CDATA[1000]]></ORD_DOC_UNIT_CD>
```

```
<ORD_DOC_VEND_LN_NO Attribute="Y"><![CDATA[1]]></ORD_DOC_VEND_LN_NO>  
<ORD_DOC_COMM_LN_NO Attribute="Y"><![CDATA[1]]></ORD_DOC_COMM_LN_NO>  
<RECON_FRM Attribute="Y"><![CDATA[2003-08-15]]></RECON_FRM>  
<RECON_TO Attribute="Y"><![CDATA[2003-09-01]]></RECON_TO>  
<RECON_AM Attribute="Y"><![CDATA[500.00]]></RECON_AM>  
<VEND_INV_NO Attribute="Y"><![CDATA[87654321]]></VEND_INV_NO>  
<SCHED_CD Attribute="Y"><![CDATA[200]]></SCHED_CD>  
<SCHED_PYMT_DT Attribute="Y"><![CDATA[2003-09-01]]></SCHED_PYMT_DT>  
<REC_NO Attribute="Y"><![CDATA[1205]]></REC_NO>
```

```
</R_SCHED_INV_GEN>  
</AMS_DATAOBJECT_XML_IMPORT_FILE>
```